

WHAT IS CLAIMED IS:

1. An improved rotation sensor having:

a cylindrical first rotor made of an insulating magnetic material, having conductor layers arranged circumferentially, the first rotor being attached to a rotating first shaft at a predetermined axial position;

5 a fixed core having an exciting coil, the core being fixed to a fixing member with a space secured in the axial direction with respect to the first shaft;

10 a second rotor having a nonmagnetic metal bodies arranged circumferentially to oppose the conductor layers respectively, the second rotor being attached to a second shaft located adjacent to and rotating relative to the first shaft and being located between the first rotor and

15 the fixed core; and

oscillating means connected to the exciting coil, the means transmitting an oscillation signal of a specific frequency;

wherein the improvement comprises:

20 rotation guides for guiding rotation of the first and second rotors respectively with respect to the fixed core.

2. The rotation sensor according to claim 1, wherein the rotation guides are guide rings obtained by molding a metal or a synthetic resin.

25 3. The rotation sensor according to claim 2, wherein a first guide ring and a second guide ring are formed on the first and second rotors respectively and are engaged with the fixed core.

30 4. The rotation sensor according to claim 3, wherein the first and second guide rings each have a multiplicity of protrusions formed circumferentially on the periphery and on the upper and lower surfaces.

5. The rotation sensor according to claim 1, wherein

the rotation guides are bearings interposed between the first rotor and the fixed core and between the second rotor and the fixed core, respectively.

6. The rotation sensor according to claim 1, wherein
5 the fixed core contains an exciting coil in a core body.

7. The rotation sensor according to claim 1, wherein the fixed core contains two exciting coils in a core body.

8. The rotation sensor according to claim 1, wherein
10 the fixed core has a case for shielding an alternate current magnetic field.